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EXAMINER
KRUSE, DAVID H

ART UNIT	PAPER NUMBER
1638	

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Please find below and/or attached an Office communication concerning this application or proceeding.

File Copy

Office Action Summary	Application No. 09/725,957	Applicant(s) HARRIS ET AL.	
	Examiner David H Kruse	Art Unit 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 May 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) *23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *8* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-21 and SEQ ID NO: 3 in Paper No. 10, filed 13 May 2002 is acknowledged. The traversal is on the ground(s) that Groups I and II were examined together in the parent application (page 2, 1st paragraph of the Response), and that all of the amino acid sequences are identical across the 21 amino acid residues as shown in Table 1 and that a search of a single sequence would identify all species of the claimed nucleic acids/proteins (pages 3-4 of the Response). This is not found fully persuasive because the restriction requirement mailed 11 April 2002 clearly states on page 2, last two sentences that this was not to be construed as an election of species. In addition, claims 1-5, 7-10, 12-15 and 17-22 are not directed to any specific species of nucleotide/amino acid sequence *per se*. Also, additional searches of the art related to issues of 35 USC 112, first paragraph, and 103 would be required for additional specific nucleotide/amino acid sequences and would pose a substantial search burden.

The Examiner informs Applicant that Group II, claim 22, will be examined along with Group I, claims 1-21, in view of Applicant's arguments, because Group II was examined in the parent application (08/909,828), and that it would not be a substantial burden on the Examiner to examine the method of using in the instant case.

The requirement is still deemed proper and is therefore made FINAL.

2. Claim 23 is withdrawn from further consideration pursuant to 37 CFR § 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 10.

3. This application contains claim 23 drawn to an invention nonelected with traverse in Paper No. 10. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR § 1.144). See MPEP § 821.01.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR § 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR § 1.48(b) and by the fee required under 37 CFR § 1.17(i).

Oath/Declaration

5. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR § 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because: the Declaration filed 6 June 2001 does not state a claim to priority under 35 USC § 120 to US Patent application 08/909,828, nor does the declaration comply with 37 CFR §§ 1.56(e) and 1.63(e), as a continuation-in-part.

Priority

6. The claim to priority on page 1 of the specification must be amended to indicate the application 09/567,326 is now abandoned.

Information Disclosure Statement

7. The information disclosure statement filed 19 October 2001 has been considered, except for citation 4, German patent application DE4108746, because no translation was submitted, and said application does not contain an English language abstract. A copy of the information disclosure statement is attached hereto.

Drawings

8. The drawings in this application are objected to by the Draftsperson as informal. See the attached PTO-948 form. Applicant is reminded that correction of the drawings cannot be held in abeyance, and that formal drawings are required in response to this Office Action as outlined in 37 CFR § 1.85(a). Failure to take corrective action within the set period will result in **ABANDONMENT** of the application.

Claim Objections

9. Claims 6, 11 and 16 objected to because of the following informalities: The instant claims are directed to non-elected inventions and should be amended accordingly. Appropriate correction is required.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the second paragraph of 35 U.S.C. § 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

11. Claims 1-22 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

At claim 1, the phrases "the modification is sufficient to reduce" and "is insufficient to destroy" are indefinite because it is unclear what is "sufficient" or "insufficient", said phrases being relative. Hence, it is unclear what the metes and bounds of the claim are.

At claim 1, lines 5 and 6, the term "gene" lacks a proper antecedent basis in the claim because the claim is directed to a modified nucleic acid. See also claims 2, 3, 5, 10 and 15. It is suggested that at line 2 of claim 1, the phrase "ribosomal protein L3" be amended to read -- ribosomal protein L3 gene --.

At claim 6, 11 and 16, the phrase "a functional equivalent thereof" is indefinite because it is unclear what the metes and bounds of this limitation are.

At claim 7, the phrase "modified ribosomal protein L3 nucleic acid" should read -- modified ribosomal protein L3 encoding nucleic acid --, because a protein is composed of amino acids and not nucleic acids.

At claims 7 and 12, line 1, and claim 22, lines 3 and 5, the phrase "a modified" should read -- the modified -- in referring to claim 1.

At claims 7 and 12, line 1, the phrase "modified ribosomal protein L3 nucleic acid" lacks a proper antecedent basis in claim 1. Appropriate correction is required.

At claim 22, line 6, the phrase "a suitable plant" is indefinite because it is unclear what the metes and bounds of "suitable" are.

12. The following is a quotation of the first paragraph of 35 U.S.C. § 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

13. Claims 1-22 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicant claims a modified nucleic acid that encodes a ribosomal protein L3 wherein said modification is "sufficient" to reduce the mycotoxin binding capabilities of the encoded ribosomal protein L3, but is "insufficient" to destroy the function of the nucleic acid as a ribosomal protein gene or functional equivalents thereof, a cloning vector containing said modified nucleic acid, a transformed plant comprising said modified nucleic acid, seed of said transformed plant, and a method of increasing resistance to *Fusarium* comprising transforming a plant with said modified nucleic acid.

Applicant only describes a modified rice gene encoding a ribosomal protein L3 (see Example 1 on pages 14-15 of the specification). All other genes, to which the invention is directed, encoding a ribosomal protein L3 described in the specification are unmodified.

Applicant does not describe any other modified ribosomal protein L3 encoding gene, other than the *Saccharomyces cerevisiae* gene that was known in the art at the time of Applicant's invention, wherein said modification is "sufficient" to reduce the

mycotoxin binding capabilities of the encoded ribosomal protein L3 but is "insufficient" to destroy the function of the nucieic acid as a ribosomal protein gene.

Hence, it is unclear from the instant specification that Applicant was in possession of the invention as broadly claimed. Especially for any transformed plant comprising any modified nucleic acid encoding a ribosomal protein L3 wherein said transformed plant is resistant to *Fusarium* infestation as claimed in claims 12-15 and 17-20.

See *Amgen Inc. v Chagai Pharmaceutical co.*, 18 USPQ 2d 1016 (Fed. Cir. 1991), which teaches that the conception of a chemical compound requires the inventor to be able to define the compound so as to distinguish it from other materials, and to describe how to obtain it rather than simply defining it solely by its principle biological property; thus, when an inventor of a gene, which is a chemical compound albeit a complex one, is unable to envision detailed constitution of the gene so as to distinguish it from other materials, as well as a method of obtaining it, the conception is not achieved until a reduction to practice has occurred, and until after the gene has been isolated.

See *University of California V. Eli Lilly and Co.*, 43 USPQ2d 1398 (Fed. Cir. 1997), which teaches that the disclosure of a process for obtaining cDNA from a particular organism and the description of the encoded protein fail to provide an adequate written description of the actual cDNA from that organism which would encode the protein from that organism, <u>despite the disclosure of a cDNA encoding that protein from another organism</u>.

See also, MPEP § 2163 which states that the claimed invention as a whole may not be adequately described where an invention is described solely in terms of a method of its making coupled with its function and there is no described or art-recognized correlation or relationship between the structure of the invention and its function. A biomolecule sequence described only by a functional characteristic, without any known or disclosed correlation between that function and the structure of the sequence, normally is not a sufficient identifying characteristic for written description purposes, even when accompanied by a method of obtaining the claimed sequence. In the instant case, the claimed modified nucleic acid is only described by its function and a method of making. In addition to the *Saccharomyces cerevisiae* modified nucleic acid described in the art, the single species from rice described by Applicant is insufficient to describe the genus to which the instant claims are directed. At claims 1-5, there is no specific indication of what modification is required to make the claimed invention. At claim 3 the modification occurs between amino acid 209 and 284, based on the amino acid numbering of the rice gene, but applicant has only described a modification of a Tryptophan to Cysteine at position 258 of the rice protein. In addition, Applicant does not describe any "functional equivalents" by which one of skill in the art would practice the claimed invention.

14. Claims 1-22 are rejected under 35 U.S.C. § 112, first paragraph, because the specification, while being enabling for a modified nucleic acid encoding a rice ribosomal protein L3 wherein said protein has a cysteine at position 258, a cloning vector comprising said modified nucleic acid, a plant comprising said nucleic acid and a

method of increasing resistance in a plant to trichothecene mycotoxins comprising transforming a plant with said nucleic acid, does not reasonably provide enablement for any modified nucleic acid encoding a ribosomal protein L3 wherein the modification is sufficient to reduce the mycotoxin binding capabilities of the encoded ribosomal protein L3 but is insufficient to destroy the function of the nucleic acid as a ribosomal protein gene, a cloning vector comprising said any modified nucleic acid, plants comprising said any modified nucleic acid or method of using said any modified nucleic acid. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Applicant claims a modified nucleic acid that encodes a ribosomal protein L3 wherein said modification is "sufficient to reduce" the mycotoxin binding capabilities of the encoded ribosomal protein L3, but is "insufficient" to destroy the function of the nucleic acid as a ribosomal protein gene or functional equivalents thereof with the proviso that said nucleic acid is not from *Saccharomyces cerevisiae*, a cloning vector containing said modified nucleic acid, a transformed plant comprising said modified nucleic acid, seed of said transformed plant, and a method of increasing resistance to *Fusarium* comprising transforming a plant with said modified nucleic acid.

Applicant only teaches a modified rice gene encoding a ribosomal protein L3 (see Example 1 on pages 14-15 of the specification). All other genes encoding a ribosomal protein L3 described in the specification are unmodified.

Applicant does not teach any other modified ribosomal protein L3 encoding gene, other than the *Saccharomyces cerevisiae* gene that was known in the art at the time of Applicant's invention, wherein said modification is "sufficient" to reduce the mycotoxin binding capabilities of the encoded ribosomal protein L3 but is "insufficient" to destroy the function of the nucleic acid as a ribosomal protein gene, nor does Applicant teach functional equivalents thereof.

In re Wands, 858F.2d 731, 8 USPQ2d 1400 (Fed. Cir. 1988) lists eight considerations for determining whether or not undue experimentation would be necessary to practice an invention. These factors are: the quantity of experimentation necessary, the amount of direction or guidance presented, the presence or absence of working examples of the invention, the nature of the invention, the state of the prior art, the relative skill of those in the art, the predictability or unpredictability of the art, and the breadth of the claims.

Applicant has provided limited guidance for modifying a nucleic acid encoding a ribosomal protein L3 wherein said modification is "sufficient" to reduce the mycotoxin binding capabilities of the encoded ribosomal protein L3, but is "insufficient" to destroy the function of the nucleic acid as a ribosomal protein gene. Applicant has taught a single example of modifying a plant gene, that being isolated from rice, which confers resistance of deoxynivalenol on a transformed plant cell, *in vitro* (see Example 5 on pages 18-19, and Example 7 on pages 19-20). In particular, claims 1-5 are directed to an undisclosed number of various modifications of any nucleic acid encoding a ribosomal protein L3, excluding that from *Saccharomyces cerevisiae*. Even within the

regions of amino acids 209-284, there are potentially 75^{20} variations of a single gene, this excluding the deletion and addition modifications at claims 2, 8 and 13. Transformation of plants with animal genes is not predictable in the art without empiric evidence because correct folding and glycosylation of heterologous-animal proteins in transgenic plants may fail to function as predicted, as claimed in claims 12-22 (see Bosch *et al* 1994, Transgenic Research 3:304-310). Hence, it would have required undue trial and error experimentation by one of skill in the art at the time of Applicant's invention to isolate a myriad of nucleic acids encoding a ribosomal protein L3, and introduce a myriad of modifications to produce a nucleic acid encoding a ribosomal protein L3 that is sufficient to reduce the mycotoxin binding capabilities of the encoded ribosomal protein L3 but is insufficient to destroy the function of the nucleic acid as a ribosomal gene, transform a myriad of plants with the modified nucleic acids and determine what modification would confer upon said transformed plants resistance to *Fusarium* infestation, as broadly claimed.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. Claims 1-21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim *et al* 1990 (Gene 93:177-182) in view of Schultz *et al* 1983 (Journal of Bacteriology 155(1):8-14) and in further view of Kim 1991 (Dissertation Abstract, Ohio State

University) and Bohn *et al* 11 August 1997 (Genbank Accession No. Z74971, submitted 4 July 1996).

Kim (1990) teaches a nucleic acid that encodes an *Arabidopsis thaliana* ribosomal protein L3 and a cloning vector containing said nucleic acid (see Figure 3 on page 180). Kim used the modified yeast nucleic acid to isolate the *Arabidopsis thaliana* nucleic acid (see page 178, left column). Kim also teaches a comparison between the *Arabidopsis* protein and the trichothecene mycotoxin resistant *Saccharomyces* protein.

Kim (1990) does not teach a modified nucleic acid that encodes an *Arabidopsis thaliana* ribosomal protein L3 wherein the modification is sufficient to reduce the mycotoxin binding capabilities of the encoded ribosomal protein L3 but is insufficient to destroy the function of the nucleic acid as a ribosomal protein gene.

Schultz teaches a *Saccharomyces cerevisiae* modified nucleic acid encoding a ribosomal protein L3 wherein the modification is sufficient to reduce the mycotoxin binding capabilities of the encoded ribosomal protein L3 but is insufficient to destroy the function of the nucleic acid as a ribosomal protein gene (see Figure 3 on page 11).

Kim (1991) teaches trichothecene mycotoxin resistant *Arabidopsis thaliana* mutants and that an altered L3-encoding gene confers trichothecene resistance in yeast. Kim also teaches that mutations in the L3-encoding gene are the expected basis for resistance to trichothecene mycotoxins in *Arabidopsis thaliana*.

Bohn teaches the wild type *Saccharomyces cerevisiae* nucleic acid encoding the ribosomal protein L3, that differs from that taught by Schultz only in that the tryptophan at position 255 has been substituted with a cysteine.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Kim (1990) to modify the *Arabidopsis* ribosomal protein L3 to comprise a cysteine in place of a tryptophan at the equivalent position 255 of the yeast protein to confer trichothecene mycotoxin resistance. Bohn teaches the wild type yeast protein's amino acid sequence, which differs by only one amino acid from that taught by Schultz as discussed above. Kim (1991) teaches that one of ordinary skill in the art should look for mutations in the ribosomal protein L3 of a plant to identify trichothecene mycotoxin resistance and that one of ordinary skill in the art should use the example of the resistant yeast ribosomal protein L3 as the example. Given the teachings of Schultz and Bohn, one of ordinary skill in the art at the time of Applicant's invention would have had a reasonable expectation of success, given the motivation provided by Kim (1991) that modified ribosomal protein L3's in plants, or other organisms, would confer trichothecene mycotoxin resistance.

17. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fluhr *et al* (WO 96/32007) in view of Kim *et al* 1990 (Gene 93:177-182) and of Schultz *et al* 1983 (Journal of Bacteriology 155(1):8-14), and in further view of Kim 1991 (Dissertation Abstract, Ohio State University) and Bohn *et al* 11 August 1997 (Genbank Accession No. Z74971, submitted 4 July 1996).

Fluhr teaches a method of increasing resistance to *Fusarium* infestation by transforming a tomato plant with a nucleic acid encoding I2C resistance gene (see Example 7 on pages 20-21).

Fluhr does not teach a method of increasing resistance to *Fusarium* infestation by transforming a plant, such as tomato, with a nucleic acid encoding a modified nucleic acid encoding a ribosomal protein L3, wherein said modification is sufficient to reduce the mycotoxin binding capabilities of the encoded ribosomal protein L3.

The teachings of Kim (1990), Schultz (1983), Kim (1991) and Bohn (1997) are discussed supra.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Fluhr to increase resistance to *Fusarium* infestation, using the teachings of Kim (1990), Schultz (1983), Kim (1991) and Bohn (1997). In particular, it would have been *prima facie* obvious to one of ordinary skill in the art at the time of Applicant's invention to use the teachings of Schultz to modify the teachings of Fluhr. The nucleic acid of Schultz encodes a ribosomal protein L3 that has all of the properties taught and claimed by Applicant, and one of ordinary skill in the art would have had a reasonable expectation of success using the nucleic acid of Schultz to modify the teachings of Fluhr in order to practice the claimed method. See *In re Lindner*, 173 USPQ 356 (CCPA 1972) and *In re Grasselli*, 218 USPQ 769 (Fed. Cir. 1983) which teach that the evidence of non-obviousness should be commensurate with the scope of the claims.

Double Patenting

18. The non-statutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper time-wise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA

1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR § 1.321(c) may be used to overcome an actual or provisional rejection based on a non-statutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR § 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR § 3.73(b).

19. Claims 1-22 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of U.S. Patent No. 6,060,646. Although the conflicting claims are not identical, they are not patentably distinct from each other because the broad genus of modified nucleic acids to which the instant claims are directed would encompass the modified nucleic acid of the Patent which comprises a coding region for a ribosomal protein L3 with a single amino acid substitution of Trp at position 255 (based on the yeast numbering), a cloning vector, a transformed plant and a method of increasing resistance to *Fusarium*.

20. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. § 101, which states, "whoever invents or discovers any new and useful process ... may obtain a patent therefore..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. § 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. § 101.

21. Claims 6, 11 and 16 are rejected under 35 U.S.C. § 101 as claiming the same invention as that of claim 4, 8 and 12 respectively of prior U.S. Patent No. 6,060,646. This is a double patenting rejection.

Conclusion

22. No claims are allowed.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David H. Kruse, Ph.D. whose telephone number is (703) 306-4539. The examiner can normally be reached on Monday to Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Amy Nelson can be reached at (703) 306-3218. The fax telephone number for this Group is (703) 872-9306 Before Final or (703) 872-9307 After Final.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Kim Davis whose telephone number is (703) 305-3015.

David H. Kruse, Ph.D.
19 July 2002

DAVID T. FOX
PRIMARY EXAMINER
GROUP ~~180~~ 1638